

[POWER AMPLIFIER HAVING HIGH HEAT DISSIPATION]

Abstract of Disclosure

A power amplifier includes a substrate, a heat sink for dissipating heat, and a heterojunction bipolar transistor (HBT) disposed on the substrate. The HBT includes a collector, a base, and at least an emitter. The power amplifier further includes an emitter electrode directly connecting the heat sink and the emitter of the HBT. The emitter electrode is a flip-chip bump, and the heat sink is a metal layer that sandwiches the HBT with the substrate. Alternatively, the emitter electrode is a backside via that penetrates the substrate, and the heat sink is a metal layer, disposed on the substrate opposite the HBT.

Figures